

## NOTES ON GEOGRAPHIC DISTRIBUTION

### Reptilia, Iguania, Liolaemini, *Liolaemus petrophilus* and *Liolaemus pictus*: distribution extension, filling gaps, new records

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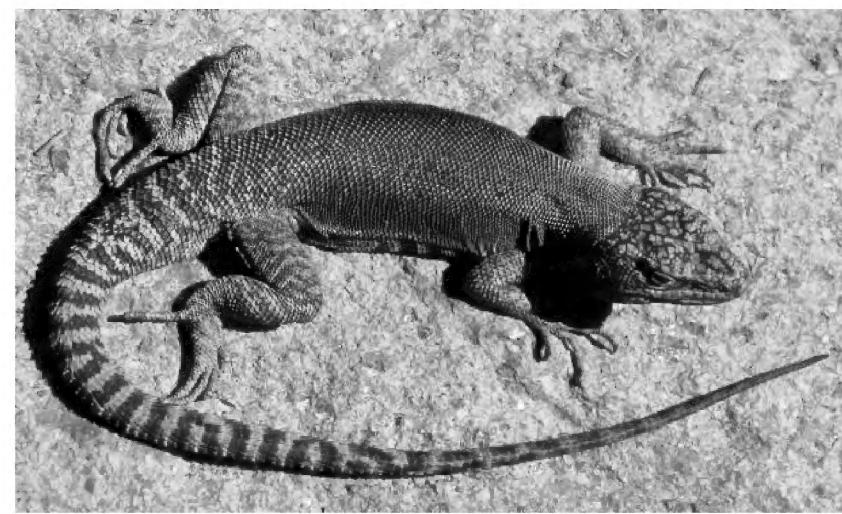
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The genus *Liolaemus* contains more than 180 species, and 58 of which occur in a variety of habitats in Patagonia (Argentina). In spite of this, our knowledge on the systematic, ecology, and geographic distribution of *Liolaemus* lizards is still very scarce. It is necessary to increase the information available on these lizards to improve our knowledge of one of the most speciose genus of vertebrates of America. Here we present new geographic distribution data on two Patagonian species of *Liolaemus*.

Lizards were collected by hand, euthanased with pericardic injection of Tiopental Sódico (Abbot®), fixed with formalin 20%, and transferred to 70% ethanol after 3-4 days. Latitude, longitude, and elevation were determined with a Garmin™ GPS 12 Global Position Device. Voucher specimens are deposited in the field collection Luciano Javier Avila Mariana Morando (LJAMM), housed in the Centro Nacional Patagónico-CONICET, Puerto Madryn (Chubut), Argentina.

*Liolaemus petrophilus* Donoso-Barros and Cei, 1971 (Figure 1) was described as endemic of Somuncurá Plateau in south-central Rio Negro province (Donoso-Barros and Cei, 1971). Later, geographic distribution was progressively extended to several areas surrounding Somuncurá Plateau and towards south and central areas of Chubut province (e.g. Cei, 1974, 1986; Scolaro, 1993; Morando *et al.* 2003). Several field trips

carried out between 1998 and 2006 to Chubut and Rio Negro provinces resulted in the collection of a considerable number of samples of *Liolaemus petrophilus*. Those samples fill distributional gaps and four of them represent significant new geographic records for the species.

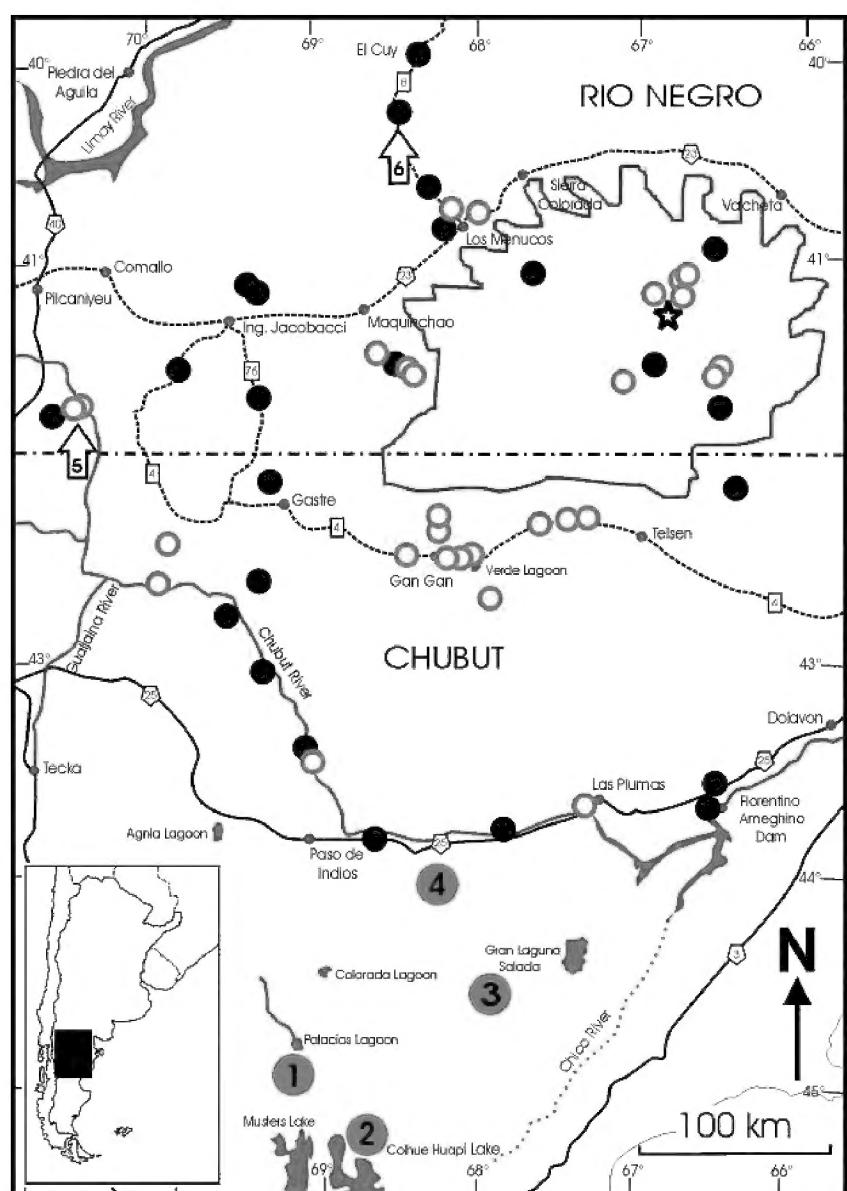


**Figure 1.** An adult male of *Liolaemus petrophilus* from central Chubut, Argentina.

All new collection sites are depicted in Figure 2, where we show the previously known geographic distribution of the species based on bibliographic information, and new localities surveyed as part of a biogeographical study of Patagonian lizards. In two localities (marked with arrows), *Liolaemus petrophilus* is found in syntopy with *L. elongatus*. Localities along Provincial Road 4 fill a distributional gap between Somuncurá Plateau and Chubut River records. Localities south of Chubut River valley represent a southern extension of about 160 km relative to the previously known geographic distribution of *L. petrophilus*. All localities are in Chubut province (the number before each one corresponds to the numbers in Figure 2) In Paso de Indios department: (1) Provincial Road 24, 37 km N Provincial Road 23 ( $44^{\circ}36'53.6''$  S  $69^{\circ}08'33.3''$  W, 555 m), L. Avila, C.H.F. Perez coll. (LJAMM 3772); (2) Provincial Road junction Provincial Road 53 near El Sombrero hill ( $44^{\circ}09'09.9''$  S  $68^{\circ}14'46.0''$  W, 486 m). L. Avila, C.H.F. Perez, N. Frutos, M. Morando coll. (LJAMM 3465-69); (3) Provincial Road 27, 78.1 km S El Sombrero hill and junction Provincial Road 53 ( $44^{\circ}35'20.3''$  S  $67^{\circ}53'47.2''$  W, 311 m), L. Avila, C.H.F. Perez coll. (LJAMM 3762 to 3766). In Sarmiento department: (4) Provincial Road 26, 28.3 km W Provincial Road 25, Pampa de los Guanacos

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( $45^{\circ}22'47.4''$  S  $68^{\circ}34'47.2''$  W, 287 m). L. Avila, C.H.F. Perez coll. (LJAMM 3803-04).



**Figure 2.** Geographic distribution of *Liolaemus petrophilus* in southern Patagonia, Argentina. Encircled numbers = localities cited in the text; Arrows with numbers = localities of syntopy between *Liolaemus petrophilus* and *L. elongates*; Black star = type locality; Green outlined area = approximately extension of the Somuncurá Plateau; Black dots = bibliographic records; red encircled dots = new localities in LJAMM collection (localities separated with less than 5 km from each other were pooled and only one dot is marked); Line-dots = provincial limits; Grey lines = National and provincial roads. Main towns and geographic landmarks are included.

*Liolaemus pictus* Duméril and Bibron, 1837 (Figure 3) is one of the few semiarboreal lizards of the genus, distributed in the northern region of the *Nothofagus* rainforest of Argentina and Chile. In Chile is one of the most southerly distributed lizard species ( $37^{\circ}$  S -  $43^{\circ}$  S), while is only marginally distributed in Argentina, mainly in the Nahuel Huapi and Lanín National Parks areas.

Five subspecies have been described according to morphological traits: *Liolaemus pictus pictus* (Duméril and Bibron, 1837) inhabiting the mainland from Concepción to Puerto Montt ( $37^{\circ}$  -  $41^{\circ}$  S), Chile (Donoso-Barros, 1966, 1970; Veloso and Navarro, 1988), *L. p. argentinus* Müller and Hellmich, 1939 from Río Negro Province in Argentina (Donoso-Barros, 1966; Cei and Williams, 1984; Cei, 1986), *L. p. chiloensis* Müller and Hellmich, 1939 from Chiloé Island, Chile (Müller and Hellmich, 1939), *L. p. talcanensis* Urbina and Zúñiga, 1977 in Talcan Island, Chile (Urbina and Zúñiga, 1977), and *L. p. major* Boulenger, 1885 from islands in the vicinity of Chiloé Island (Donoso-Barros, 1966). A recent work by Pincheira-Donoso and Nuñez (2005) did not recognize *L. p. major* but they described two new subspecies from Chile, *L. p. codoceae* and *L. p. septentrionalis*. But we prefer to be conservative about the nomenclatural problems with this group.

For Argentina two subspecies were cited in the literature, *Liolaemus pictus pictus* and *L. pictus argentinus* (Cei and Williams, 1984; Müller and Hellmich, 1939). Cei and Williams (1984) , based on a few samples from the Museo de La Plata collected by Francisco P. Moreno Expedition, cited the presence of *Liolaemus pictus pictus* in two localities of Argentina, Junín de los Andes and Las Lajas in Neuquén province. Two of us (LJA and MM) made several field trips to both areas and we were unable to find this species or suitable habitats for it. Las Lajas region is relatively far away of any woodland and is improbable that woodland boundaries were extended there in late XIX century. Junín de los Andes area is in the limit between the forest and the Patagonian steppe and we never found *L. p. pictus* there. We suspect that samples in Museo de La Plata referred by Cei and Williams (1984) were probably collected western to these localities and labeled with the nearest named locality at that time. Then, we suggest that only the subspecies *L. pictus argentinus* must be considered as distributed in Argentina as suggested by Müller and Hellmich (1939). The majority of the localities for this subspecies cited in the literature are restricted to Rio Negro and Neuquén provinces (Cei, 1986). A detailed geographical survey carried out in Nahuel Huapi and Lanín

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National Parks was made by Christie (1984) but without any reference to voucher specimens. Cei (1986) stated that the species is present in andean forest of Neuquén, Rio Negro and Chubut provinces mentioning the possibility that its distribution follow the remnants of *Nothofagus* forest south to Buenos Aires Lake in Santa Cruz province. However, in its distribution map only the localities in southwestern Rio Negro province (Nahuel Huapi Lake and El Bolsón region) and around Buenos Aires Lake are marked without any locality in western Chubut. Christie (1984) stated that *Liolaemus pictus argentinus* is the only woodland lizard found south of Nahuel Huapi Lake. After several field trips, we did not find any *Liolaemus pictus* population around Buenos Aires Lake, and suitable habitats are scarce at least in this Argentinean region. In the Chilean region, *Liolaemus pictus* subspecies are not known south of 43° S (Vidal et al., 2006) and recent surveys in the Aysen region (at the same latitude of Buenos Aires Lake) did not register this species (P. Victoriano, pers. com.).



**Figure 3.** An adult male of *Liolaemus pictus* from Neuquén, Argentina.

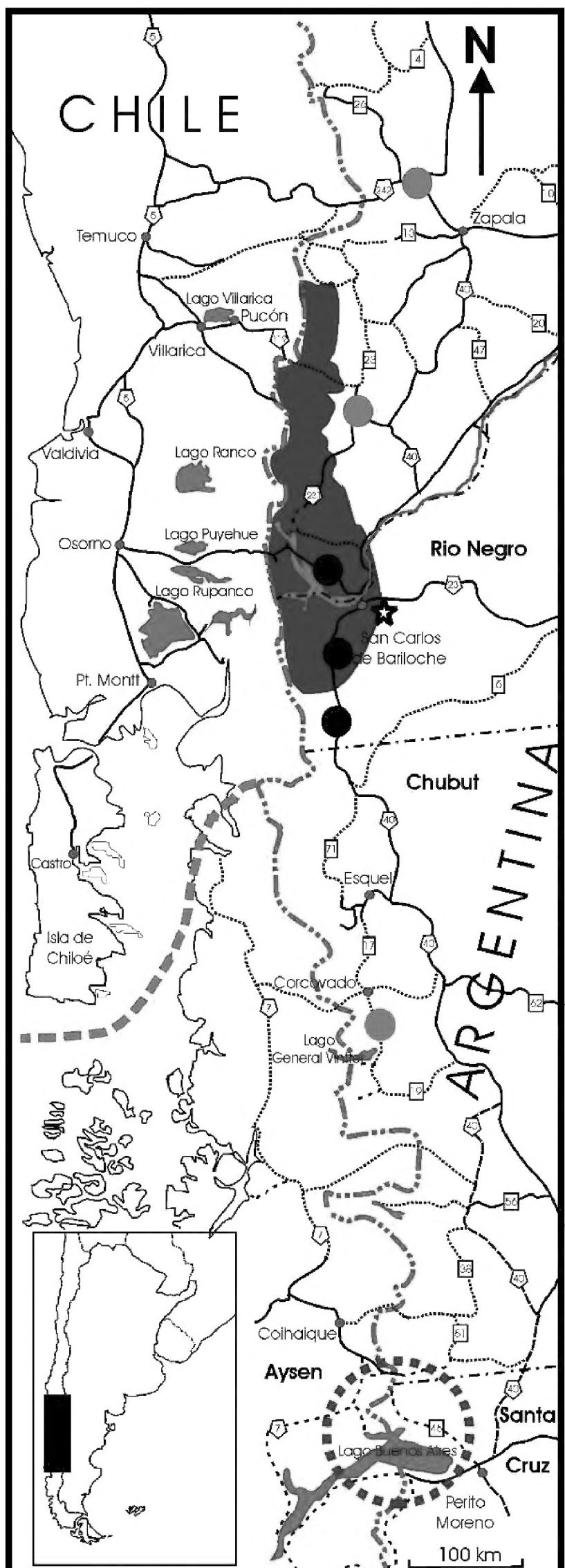
Herein we report a new record that fills a gap between the previously published localities but also represents a significant extension in geographic distribution if we consider only as consistent information the geographic data supported with vouchers specimens of herpetological collections. Two specimens of *Liolaemus pictus* were collected at Ruta Provincial 44, 24.6 km S Corcovado, L. Avila , M. Kozykarisky, N. Frutos, coll. (LJAMM 6515,

6516) (71°24'37.6" S 43°42'08.1" W, 660 m) on 19 March 2006, in a rocky slope along the road, representing the first locality of the species cited for western Chubut province (Figure 4). This locality is about 180 km southern of El Bolsón, Rio Negro, the southernmost locality cited by Cei (1986). Our small sample for Corcovado area is tentatively assigned to *Liolaemus pictus argentinus*, but validity of this subspecies require further study because diagnostic characters to differentiate both subspecies are weak in a broad geographic context.

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**Figure 4.** Geographic distribution of *Liolaemus pictus* in central west Patagonia, showing the new locality for the species (orange dot). Black star =

type locality of *L. p. argentinus*; Dotted green circled area around Buenos Aires Lake = La Plata Museum sample of *Liolaemus pictus argentinus* cited by Cei and Williams (1984); Black dots = localities cited by Cei (1986). Green area = Nahuel Huapi and Lanín National Parks surveyed by Christie (1984); Red dotted line in southern Chile = the southern limit of distribution for *L. pictus* according to the literature; Red dots = localities for *L. pictus pictus* cited by Cei and Williams (1984). Line-dots = provincial limits. Blue line = Chile and Argentina boundaries. Main roads, lakes, and cities are marked in the map.

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